

# PATENT SPECIFICATION

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## (54) LOOSE-LEAF RING BINDING DEVICE

(71) I, ROBERT KRAUSE, a German Citizen, trading as ROBERT KRAUSE KG., of 4992 Espelkamp, Hindenburgring 11, Federal Republic of Germany, do hereby  
 5 declare the invention for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 The present invention relates to a loose-leaf ring binding mechanism.

It is known to fit a ring binding mechanism to the inner side of a jacket, for instance a cover of a ring binder or a filing folder. Such a mechanism may consist of a flexible spring base element, which is connected to the inner side of the jacket, and at least two rings, each of which is in two  
 20 parts. The two parts of each ring are mounted for movement to and fro in a rockerlike manner. When suitably rocked, the "split" rings can be opened and closed as is known.

In known ring binding mechanisms of this type, the spring base elements are considerably longer than the distance between their two rings or, where more than two rings are provided, between the two outer rings. Such mechanisms are normally riveted to the jacket by rivets passing through outer areas of the base elements which project at either end of the base elements beyond the rings. It is particularly disadvantageous from the point of view of  
 35 mass production for the base elements to possess outer end areas extending beyond the rings on the ground of spring material consumed and its cost. Moreover, the length and consequently the weight of the known devices unfavourably affect packaging and despatch, due to space requirements and ever increasing height charges.

45 The present invention aims to provide a ring binding device in which the length and

the weight of the base element of the mechanism are substantially yet simply minimised whilst maintaining its spring qualities.

According to the present invention there is provided a loose leaf ring binding mechanism for attachment to a filing folder or ring binder for holding punched stationery, the mechanism including a spring base member mounting pairs of up-  
 55 standing ring binding elements for rocker movement between open and closed positions, the spring base member having tongues depressed from its upper surface for face-to-face contact with a filing folder or  
 60 ring binder, the tongues being apertured to allow the mechanism to be rivetted to the folder or binder, and the tongues being located between and equidistant from ring binding elements which are located at opposite ends of the mechanism, the spring  
 65 base member terminating flush with the said elements located at the ends of the mechanism.

Surprisingly, it has turned out that the spring properties of the base member are not impaired to any notable extent by the tongues therein disposed between the ring binding elements.

Advantageously, however, the base member includes reinforcing beads which are disposed parallel to the plane of the ring binding elements so as to enhance the spring properties of the base member.

The spring base member would normally be of metallic construction, but could be made from a resilient plastics material.

Further features of the invention will now be described by way of example only with reference to the accompanying drawing, in which the sole Figure illustrates a preferred embodiment of the invention in perspective.

The illustrated device is a loose leaf ring binding mechanism for holding punched

stationery and is designated as a whole by the reference 1. The device has a spring base element 2 and split ring parts 3, which define ring binding elements to receive punched stationery and which are supported by support members, not shown, the ring support members being movable in a toggle action to allow the ring parts 3 to move in a rocker-like manner between closed positions shown in the Figure to open positions, not shown. The ring support members are disposed beneath and are covered by the slightly arched base element 2 and are therefore not visible in the drawing. Between the upstanding ring parts 3, the base element 2 has lugs or tongues 4 which are depressed downwardly from the upper surface of base element 2, i.e. towards the plane of the inner side of a jacket (not shown) to which the device 1 is to be fitted. The depressed tongues 4 present a pair of connecting surfaces for fastening the base element 2 to the jacket, the tongues and jacket abutting one another when device 1 is fastened thereto. Rivet holes 5 are provided in the tongues 4 to rivet the base element 2 to the jacket. As shown, the tongues 4 are equidistant from the ring parts 3.

In order to reinforce the base element 2 reinforcing beads or ridges 6 are provided, the ridges 6 serving to enhance the spring properties of the base member 2. The pair of ring parts 3 at the opposite ends of the base member 2 are overlapped by short tapered extensions 7 of the base member 2, and the tapered extensions 7 terminate substantially flush with the rings parts 3. Whilst the extensions 7 should terminate flush with the ring parts 3, it is not essential for the extensions 7 to have the tapered shape shown in the drawing. It is also possible for the base member 2 to accommodate one or more additional ring parts 3. The base member 2 can, for instance, be extended in length and to accommodate one or several further pairs of ring parts 3.

As shown, the means for connecting the base member 2 to a jacket comprises a pair of depressed tongues 4. Further tongues could be provided if desired, particularly in the of a device having a multiplicity of ring parts 3.

#### WHAT I CLAIM IS:

1. A loose-leaf ring binding mechanism for attachment to a filing folder or ring binder for holding punched stationery, the mechanism including a spring base member mounting pairs of upstanding ring binding elements for rocker movement between open and closed positions, the spring base member having tongues depressed from its upper surface for face-to-face contact with a filing folder or ring binder, the tongues being apertured to allow the mechanism to be rivetted to the folder or binder, and the tongues being located between and equidistant from ring binding elements which are located at opposite ends of the mechanism, the spring base member terminating flush with the said elements located at the ends of the mechanism.

2. A device as claimed in claim 1, wherein the base member includes reinforcing beads or ridges which are disposed parallel to the plane of the ring binding elements.

3. A device as claimed in claim 2, wherein the reinforcing beads are located between the ring elements which are at the ends of the base member, each bead being adjacent one of the said tongues.

4. A loose-leaf ring bending device constructed and arranged substantially as herein described with reference to the accompanying drawing.

5. A loose-leaf ring binder incorporating a ring binding device as claimed in any one of the preceding claims.

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COMPLETE SPECIFICATION

1 SHEET

*This drawing is a reproduction of  
the Original on a reduced scale*

